

# UNCLASSIFIED

Exhibit R-2, RDT&E Budget Item Justification: PB 2014 Navy										DATE: April 2013		
APPROPRIATION/BUDGET ACTIVITY 1319: Research, Development, Test & Evaluation, Navy BA 5: System Development & Demonstration (SDD)					R-1 ITEM NOMENCLATURE PE 0304785N: Tactical Cryptologic Systems							
COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 <sup>#</sup>	FY 2014 Base	FY 2014 OCO <sup>##</sup>	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
Total Program Element	205.325	31.740	23.255	9.406	-	9.406	9.340	9.558	9.856	10.014	Continuing	Continuing
2134.: Shipboard IW Exploit	205.325	31.740	23.255	9.406	-	9.406	9.340	9.558	9.856	10.014	Continuing	Continuing
# FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012												
## The FY 2014 OCO Request will be submitted at a later date												
A. Mission Description and Budget Item Justification												
The Shipboard Information Warfare (IW) line includes the Ships Signal Exploitation Equipment (SSEE) Increment (Inc) E, F, G and modification programs. The SSEE program is a classified IW / Electronic Warfare (EW) and tactical cryptologic system that provides critical tactical intelligence, situational awareness, battlespace awareness, indications and warnings and hostile threat assessment. These systems provide the battle group and combatant commanders with the surface fleet's only EW non-kinetic capabilities ("Finish"). In addition they provide the battle groups with real time indications and warnings by acquisition ("Find") and localization ("Fix") of Signals of Interest (SOI). As an incremental acquisition program, Research, Development, Test & Evaluation (RDT&E) funding is required to have new technologies and associated new operational capabilities rapidly developed and transitioned as Pre-Planned Product Improvements (P3I) upgrades into the system's hardware/ software configuration. This program's funding incorporates P3I, new Commercial Off-the-Shelf (COTS) based technologies and software into the existing systems. Funding will also focus on developing and delivering expanded non-kinetic EW capabilities and net-centric Service Oriented Architecture (SOA), which includes the development, integration and test of Medusa and the SSEE Modification capabilities in support of "Ballistic Missile Defense (BMD) Executive Committee (EXCOM) Anti-Submarine Warfare (ASW) Chief of Naval Operations (CNO) Executive Board Information Operation (IO) Countermeasure Red Flash/Medusa (details classified)."												
Integrated Communications and Data System (ICADS) AN/URC-148(V) is a Chief of Naval Operations (CNO) directed mission critical system which provides limited back-up, mobile communications capability for large deck naval platforms. The system provides a reliable, limited solution for re-establishing command and control for high value unit, subordinate units, and controlling fleet entities. ICADS is comprised of several mature systems. Specific program details held at a higher classification.												

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<b>APPROPRIATION/BUDGET ACTIVITY</b> 1319: <i>Research, Development, Test &amp; Evaluation, Navy</i> BA 5: <i>System Development &amp; Demonstration (SDD)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0304785N: <i>Tactical Cryptologic Systems</i>
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<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014 Base</b>	<b>FY 2014 OCO</b>	<b>FY 2014 Total</b>
Previous President's Budget	31.740	23.255	9.310	-	9.310
Current President's Budget	31.740	23.255	9.406	-	9.406
Total Adjustments	0.000	0.000	0.096	-	0.096
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Program Adjustments	0.000	0.000	-0.001	-	-0.001
• Rate/Misc Adjustments	0.000	0.000	0.097	-	0.097

**Change Summary Explanation**

Due to FY12 Fleet reprioritization of requirements to complete the accelerated development and operationalization of the SSEE Modification Program in support of "BMD EXCOM ASW CEB Information Operation (IO) Countermeasure Red Flash/Medusa" efforts, SSEE Increment G program pre-acquisition activities were deferred to FY13 and SSEE Increment E program activities were extended to FY14.

Decrease in funding from FY13 to FY14 due to completion of installation, integration and testing of 2 SSEE Modification EDMs, as well as completion of integration and testing of the High Gain IO Topside Antenna.

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COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 <sup>#</sup>	FY 2014 Base	FY 2014 OCO <sup>##</sup>	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
2134.: Shipboard IW Exploit	205.325	31.740	23.255	9.406	-	9.406	9.340	9.558	9.856	10.014	Continuing	Continuing
Quantity of RDT&E Articles	0	2	0	0		0	0	0	0	0		

<sup>#</sup> FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

<sup>##</sup> The FY 2014 OCO Request will be submitted at a later date

## A. Mission Description and Budget Item Justification

The Shipboard Information Warfare (IW) line includes the Ships Signal Exploitation Equipment (SSEE) Increment (Inc) E, F, G and modification programs. The SSEE program is a classified IW / Electronic Warfare (EW) and tactical cryptologic system that provides critical tactical intelligence, situational awareness, battlespace awareness, indications and warnings and hostile threat assessment. These systems provide the battle group and combatant commanders with the surface fleet's only EW non-kinetic capabilities ("Finish"). In addition they provide the battle groups with real time indications and warnings by acquisition ("Find") and localization ("Fix") of Signals of Interest (SOI). As an incremental acquisition program, Research, Development, Test & Evaluation (RDT&E) funding is required to have new technologies and associated new operational capabilities rapidly developed and transitioned as Pre-Planned Product Improvements (P3I) upgrades into the system's hardware/software configuration. This program's funding incorporates P3I, new Commercial Off-the-Shelf (COTS) based technologies and software into the existing systems. Funding will also focus on developing and delivering expanded non-kinetic EW capabilities and net-centric Service Oriented Architecture (SOA), which includes the development, integration and test of Medusa and the SSEE Modification capabilities in support of "Ballistic Missile Defense (BMD) Executive Committee (EXCOM) Anti-Submarine Warfare (ASW) Chief of Naval Operations (CNO) Executive Board Information Operation (IO) Countermeasure Red Flash/Medusa (details classified)."

SSEE Inc E will initiate software and hardware development of Medusa intended for integration into the SSEE Inc E system in support of accelerated development and operationalization of "BMD EXCOM ASW CEB IO Countermeasure Red Flash/Medusa.

SSEE Inc F will be developing software and hardware upgrades in support of emergent adversary Signal of Interest (SOI), inserting SOI and new technology enhancements via incremental software builds and corresponding hardware upgrades.

SSEE Inc G will integrate and improve upon all aspects of the "BMD EXCOM ASW CNO CEB IO Countermeasure Red Flash/Medusa" and expand upon the SSEE Inc F capability of exploiting signals throughout the Radio Frequency (RF) spectrum, in addition to focusing new technologies towards new and previously unexplored/unexploited CYBER capabilities as we integrate into the Electronic Warfare (EW) Battle Management Network. SSEE Inc G will build off of the advancement of the Inc F system to automate and integrate all existing Ships Signal Exploitation Space (SSES) capabilities into a common user interface, while still advancing and incorporating new technologies through an open software architecture that allows for rapid integration and deployment of those capabilities.

The SSEE Modification program includes the "BMD EXCOM ASW CEB IO Countermeasure Red Flash/Medusa", capabilities of Paragon and Graywing. Paragon (Frequency Extension) is a classified Navy tactical signals intelligence frequency extension capability that will be integrated into Ships Signal Exploitation Equipment (SSEE) Inc E and F programs. This capability provides simultaneous detection, collection, processing, Electronic Warfare and display of communication intelligence

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data from hostile, high threat and adversary platforms in select frequency ranges that are not prosecuted or encountered today. Graywing is an electronic sensing and attack capability that shares the Paragon topside exploitation assets and will be integrated into SSEE Inc E and F systems.		
ICADS (AN/URC-148(V)) is a Chief of Naval Operations (CNO) directed mission critical system which provides limited back-up, mobile communications capability for large deck naval platforms. The system provides a reliable, limited solution for re-establishing command and control for high value unit, subordinate units, and controlling fleet entities. ICADS is comprised of several mature systems. Specific program details held at a higher classification. FY14 funding for SSEE INC E will be used to develop additional capabilities for Medusa to prosecute relevant signal sets. Formulate additional target sets that address new Areas of Responsibility (AORs). Develop foundational plan that addresses ability of Medusas to communicate with each other.		
FY14 funding for SSEE Inc F will continue pre-planned product improvements (P3I), expand the SOI processing capability, enhance SSEE Inc F remote capabilities and integrate Medusa HW into the SSEE Inc F scan chassis. FY14 funding for SSEE Inc G will continue pre-acquisition activities leading up to MS B and release the Request for Proposal (RFP). Continue to integrate and improve upon all aspects of the "BMD EXCOM ASW CNO CEB IO Countermeasure Red Flash/Medusa". Expand upon the SSEE Inc F capability of exploiting signals throughout the Radio Frequency (RF) spectrum, in addition to focusing new technologies towards new and previously unexplored/unexploited cyber capabilities as we integrate into the Electronic Warfare (EW) Battle Management Network.		
FY14 funding for SSEE Mods will continue Phase 2 hardware and software development to provide capabilities to the Fleet in support of "BMD EXCOM ASW CEB IO Countermeasure Red Flash" including automation of key system operation and maintenance procedures; additional SOIs in support of Fleet needs; and enhance system capabilities for Graywing and Paragon in order to meet FRP performance thresholds. Speed to Fleet efforts within SSEE Mods uses hardware provided in conjunction with Graywing development to deliver a self-contained, transportable system to provide shore based capabilities. In addition to providing an independent shore based capability the Speed to Fleet design provides an alternative Graywing receive and transmit subsystem design for risk reduction to Program of Record (POR). The transportable Speed to Fleet Graywing also provides an accessible platform to rapidly demonstrate new or improved Information Operations (IO) capabilities by providing a relatively low cost land-based field test article. Furthermore, the hardware developed under this project could be adapted as a roll-on/roll-off ship configuration to supplement the POR installations, if needed by the Fleet. Graywing is a sub system of the SSEE Modification Program to expand the capability of the Ship Signal Exploitation Equipment (SSEE). The POR will acquire multiple Graywing systems for ship installation over the period FY13 through FY17.		
The Speed to Fleet efforts will deliver a new firmware spiral that increases the capability of Medusa to respond to a wider range of threat systems, and to improve aspects of its capabilities. It will also deliver a laboratory test system that will be used to validate future firmware changes. Medusa is a sub system of the SSEE POR. The POR will acquire multiple Medusa systems for ship installation over the period FY11 through FY17.		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		
Title: Ship Signals Exploitation Equipment Inc F (SSEE Inc F)		
Articles:	FY 2012	FY 2013
	FY 2014	
	3.129	3.720
	0	0
FY 2012 Accomplishments:		

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<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>			<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>
Expanded Signal of Interest (SOI) processing capability to allow collection of the newest high priority modern technology threat signals for tightly integrated IO/non-kinetic capabilities in support of time critical military strike operations and subsequent processing and analysis for timely and accurate situational awareness for force protection. Developed and delivered EW capabilities based on FY12 SOI threats for integration into SSEE Inc F. Developed the first phase of Software Development Kit (SDK) for the Application Store (App Store) concept which provides the framework for 3rd party developers to rapidly develop and integrate new capabilities into the SSEE Inc F system. Enhanced the SSEE Inc F remote capabilities providing increased functionality and capabilities to remote users. Continued software and hardware development of Medusa for inclusion into the SSEE Increment F hotel rack. Begin MEDUSA Phase II hardware and software development.					
<b>FY 2013 Plans:</b> Continue pre-planned product improvements (P3I) to provide enhanced and additional capabilities into the SSEE Inc F system. Expand SOI processing capabilities to allow collection of the newest high priority modern technology threat signals for tightly integrated IO/non-kinetic capabilities. Continue development and deliver EW capabilities based upon the warfighter identified, FY13 SOI threats (annually-updated) for integration into the SSEE Inc F system. Enhance the SSEE Inc F remote capabilities providing increased functionality and capabilities to remote users. Incorporate the next incremental software build, which will also allow transition of the SSEE Inc F software Graphic User Interface (GUIs) to SSEE Inc E. Continue development of third party software, including an Interface Control Drawing (ICD) and Software Development Kit (SDK) processes, which will allow new capabilities to be hosted into the SSEE Inc F system in support of the "BMD EXCOM ASW CEB IO Countermeasure Red Flash/Medusa". Complete software development of Medusa Phase II. Conduct Follow-On Test & Evaluation (FOT&E) to address correction of deficiencies as per Operational Test (OT) findings.					
<b>FY 2014 Plans:</b> Continue pre-planned product improvements (P3I) to provide enhanced and additional capabilities into the SSEE Inc F system. Expand SOI processing capability to allow collection of the newest high priority modern technology threat signals for tightly integrated IO/non-kinetic capabilities in support of time critical military strike operations and subsequent processing and analysis for timely and accurate situational awareness for force protection. Develop and deliver EW capabilities based upon the warfighter identified, FY14 SOI threats (annually-updated) for integration into the SSEE Inc F system. Enhance the SSEE Inc F remote capabilities providing increased functionality and capabilities to remote users. Integrate Medusa HW into the SSEE Inc F scan chassis. Maintain cognizant of current signal set and make additions to the system as needed.					
<b>Title:</b> Ship Signals Exploitation Equipment Inc G (SSEE Inc G)			0.000	0.400	0.840
<b>Articles:</b>				0	0
<b>FY 2013 Plans:</b>					

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
Commence pre-acquisition activities with a prime focus on analyzing and documenting the results of the research studies on cyber capabilities (details classified) and their incorporation into the SSEE Inc G software. Determine if these capabilities are feasible in the maritime environment, and employ an Analysis of Alternative (AoA) based on these results. <b>FY 2014 Plans:</b> Continue pre-acquisition activities leading up to MS B. Continue to integrate and improve upon all aspects of the "BMD EXCOM ASW CNO CEB IO Countermeasure Red Flash/Medusa". Expand upon the SSEE Inc F capability of exploiting signals throughout the Radio Frequency (RF) spectrum, in addition to focusing new technologies towards new and previously unexplored/unexploited CYBER capabilities as we integrate into the Electronic Warfare (EW) Battle Management Network. Build off of the advancement of the SSEE Inc F system to automate and integrate all existing Ships Signal Exploitation Space (SSES) capabilities into a common user interface, while still advancing and incorporating new technologies through an open software architecture that allows for rapid integration and deployment of those capabilities into the SSEE Inc G baseline. Release Request for Proposal (RFP) for SSEE Inc G.				
Title: Integrated Communicatios and Data Systems (ICADS) <b>Articles:</b> <b>FY 2013 Plans:</b> FY13 funding is required to complete acquisition documentation to support Milestone C production decision. Funding will develop and integrate system design variants to support refined COMPACFLT requirements and support multiple test events. Specific program details held at a higher classification.		0.000	3.787 0	0.000
Title: SSEE Modifications <b>Articles:</b> <b>FY 2012 Accomplishments:</b> Accelerated development, integration and testing of the Paragon and Graywing capability. Continued Phase I development towards MS C, refined and completed final Engineering Development Model (EDM) design for the High Gain Information Operation (IO) and Hemispherical Broad Band Direction Finding antennas and below-deck rack components. Procured EDM hardware, assembled, integrated 1 Paragon and 1 Graywing EDM #1. Initiated laboratory testing for the below deck integration to the topside antenna suite, integration and testing of Paragon/Graywing software with SSEE Increment F software. Began development of the test plan for Developmental Test (DT)/Operational Assessment (OA) in support of MS C. <b>FY 2013 Plans:</b> Receive delivery of 1 Paragon and 1 Graywing EDM2 for environmental testing. Complete integration and testing with the High Gain IO topside antenna and install EDM #2 for Paragon/Graywing Phase I (OA) in support of MS C. Commence development efforts for Phase II, which provides: automation of key system operation and maintenance procedures; additional SOIs in support		26.611 2	12.651 0	4.060 0

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014	
of Fleet needs; and enhances system capabilities for Graywing and Paragon in order to meet Full Rate Production (FRP) performance thresholds. <b>FY 2014 Plans:</b> Continue SSEE Mods Phase 2 hardware and software development to provide: capabilities to the Fleet in support of "BMD EXCOM ASW CEB IO Countermeasure Red Flash" including automation of key system operation and maintenance procedures; additional SOIs in support of Fleet needs; and enhance system capabilities for Graywing and Paragon in order to meet FRP performance thresholds. Provide test plans and procedures for follow on testing and evaluation, including an updated Test and Evaluation Master Plan (TEMP). Conduct integration and testing in support of correction of deficiencies from Operational Assessment (OA). FY14 efforts support the Full Rate Production (FRP) decision in FY15.					
Title: Ship Signals Exploitation Equipment Inc E (SSEE Inc E) <b>Articles:</b>		2.000 0	1.500 0	0.200 0	
FY 2012 Accomplishments: Initiated software and hardware development Phase II of Medusa intended for integration into the SSEE Inc E system in support of accelerated development and operationalization of "BMD EXCOM ASW CEB IO Countermeasure Red Flash/Medusa. <b>FY 2013 Plans:</b> Complete software development of Medusa Phase II which integrates the Direction Finding (DF) and Information Operations (IO) capabilities to the SSEE Inc E system. Initiate Switchblade Phase III efforts for SSEE Inc E which ports the SSEE Inc F service layer to SSEE Inc E that provides common user interface and remoting capabilities, which will also allow transition of the SSEE Inc F software Graphic User Interface (GUIs) to SSEE Inc E. <b>FY 2014 Plans:</b> Develop additional capabilities for Medusa to prosecute relevant signal sets. Formulate additional target sets that address new Areas of Responsibility (AORs.) Develop foundational plan that addresses ability of Medusas to communicate with each other.					
Title: Shipboard IW Exploit <b>Articles:</b>		0.000	1.197 0	0.899 0	
FY 2013 Plans: Shore based Graywing: - Assemble system and perform end-to-end hardware testing. - Integrate and test the control software including user interface for operations, displays and diagnostics. - Integrate and test the Mission Planning Tool modified for land operation. - Perform end-to-end testing of the system. Document results in after-test reports. - Develop operator user manuals, diagnostic procedures and a capabilities description.					

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<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>										<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>
<p>Medusa Upgrade:</p> <ul style="list-style-type: none"> <li>- Conduct benchtop testing of new Medusa firmware against designated signals.</li> <li>- Conduct field test against surrogate threat system. Document test results.</li> <li>- Document firmware modifications.</li> </ul> <p><b>FY 2014 Plans:</b></p> <p>Graywing:</p> <ul style="list-style-type: none"> <li>- Provide support to the fleet for test and evaluation of the system that is to be delivered in early FY14.</li> </ul> <p>TACAID:</p> <ul style="list-style-type: none"> <li>- Continued development of an enhanced tactical decision aid (TACAID) which will provide additional capabilities compared to the baseline TACAID being incorporated into Ship Signals Exploitation Equipment (SSEE) under the SSEE prototype tool and at sea testing.</li> </ul>												
<b>Accomplishments/Planned Programs Subtotals</b>										31.740	23.255	9.406
<b>C. Other Program Funding Summary (\$ in Millions)</b>												
<b>Line Item</b>	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014 Base</b>	<b>FY 2014 OCO</b>	<b>FY 2014 Total</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	
• OPN / 2360: <i>Shipboard IW Exploit</i>	99.447	107.060	123.656		123.656	150.505	152.015	164.646	167.936	Continuing	Continuing	
• OPN / 2188: <i>Electronic Warfare MILDEC</i>	16.841	0.000	8.958		8.958	8.992	0.000	0.000	0.000	Continuing	Continuing	
<b>Remarks</b>												
<b>D. Acquisition Strategy</b>												
<p>Acquisition, management and contracting strategies are to support engineering and manufacturing development by providing funds to a Prime Contractor and Space &amp; Naval Warfare Systems Command (SPAWAR) Systems Center (SSC) - Atlantic, SSC - Pacific and miscellaneous contractors, with management oversight by SPAWAR.</p> <p>Funding supports development and demonstration to rapidly deliver advanced and improved Information Operation (IO) capabilities to the Fleet. The Shore based Graywing unit developed will provide a rapidly deployable capability for the protection of land based resources. Multiple copies of the first article can be replicated depending on operational needs. These systems could also be used as a carry on capability to supplement the Graywing ship installations via the SSEE Mods ACAT III program or to those ships that are not SSEE capable. The Medusa upgrade adds additional capabilities via software to address a different class of radars which are proliferating, allowing backfit into existing systems via a new software load.</p>												



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<b>E. Performance Metrics</b> <p>SSEE Increment F will incorporate pre-planned product improvements (P3I) to provide enhanced and additional capabilities into the SSEE Inc F system. SSEE Inc F improvements along with the addition of the SSEE Modifications and Medusa capabilities will expand signals of interest (SOI) processing capability to allow collection of the newest high priority modern technology threat signals for tightly integrated IO/non-kinetic capabilities in support of time critical military strike operations and subsequent processing and analysis for timely and accurate situational awareness for force protection.</p> <p>Program of Record (POR) specification has established Graywing performance metrics that will be met in the Speed to Fleet transportable version. Field testing will be used to verify this performance. Medusa firmware modifications will meet existing Medusa performance metrics for the new signal classes and will be verified via bench testing and end-to-end field testing.</p>		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Navy												DATE: April 2013			
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Product Development (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Primary Hardware Development	Various	Various:Various	73.395	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Primary Hardware Development	WR	SSC PAC:San Diego, CA	1.125	2.200	Nov 2011	0.700	Nov 2012	0.000		-		0.000	Continuing	Continuing	Continuing
Systems Engineering	Various	Various:Various	22.309	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Systems Engineering	C/CPAF	Classified Contract:Classified Contract	0.950	3.159	Nov 2011	2.550	Nov 2012	0.830	Nov 2013	-		0.830	Continuing	Continuing	Continuing
Systems Engineering	WR	SSC PAC:San Diego, CA	0.750	1.650	Nov 2011	0.875	Nov 2012	0.375	Nov 2013	-		0.375	Continuing	Continuing	Continuing
Systems Engineering	WR	SSC LANT:Charleston, SC	2.485	1.487	Nov 2011	0.750	Nov 2012	0.322	Nov 2013	-		0.322	Continuing	Continuing	Continuing
Training Development	WR	SSC PAC:San Diego, CA	1.696	0.613	Nov 2011	0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Primary Hardware Development	C/CPAF	Classified Contract:Classified Contract	0.000	6.684	Nov 2011	4.547	Nov 2012	2.052	Nov 2013	-		2.052	Continuing	Continuing	Continuing
Primary Hardware Development	WR	NRL:Washington, DC	0.000	1.900	Nov 2011	0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Primary Software Development	WR	NRL:Washington, DC	0.000	0.720	Nov 2011	0.500	Nov 2012	0.250	Nov 2013	-		0.250	0.000	1.470	
Integration, Assembly & Test (PMP Dev)	WR	SSC PAC:San Diego, CA	0.000	1.455	Nov 2011	0.359	Apr 2013	0.129	Nov 2013	-		0.129	0.000	1.943	
Integration, Assembly & Test (PMP Dev)	WR	NRL:Washington, DC	0.000	0.800	Nov 2011	0.870	Nov 2012	0.239	Nov 2013	-		0.239	0.000	1.909	
Software Development	Various	Various:Various	40.776	0.000		0.000		0.000		-		0.000	0.000	40.776	
Integration, Assembly & Test	WR	OPTEVFOR:Norfolk, VA	0.000	0.000		0.039	Nov 2012	0.039	Nov 2013	-		0.039	0.000	0.078	
Software Development	C/CPAF	Classified Contracts:Classified Contracts	18.400	1.934	Nov 2011	3.509	Apr 2013	1.690	Nov 2013	-		1.690	0.000	25.533	

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APPROPRIATION/BUDGET ACTIVITY 1319: Research, Development, Test & Evaluation, Navy BA 5: System Development & Demonstration (SDD)						R-1 ITEM NOMENCLATURE PE 0304785N: Tactical Cryptologic Systems				PROJECT 2134.: Shipboard IW Exploit					
Product Development (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Primary Hardware Development	WR	SSC LANT:Charleston, SC	0.000	0.300	Nov 2011	0.447	Nov 2012	0.150	Nov 2013	-		0.150	0.000	0.897	
Software Development	WR	SSC PAC:San Diego, CA	0.857	0.171	Nov 2011	0.300	Nov 2012	0.155	Nov 2013	-		0.155	0.000	1.483	
Integration, Assembly & Test	C/CPAF	Classified Contracts:Classified Contracts	0.000	1.581	Nov 2011	0.364	Apr 2013	0.287	Nov 2013	-		0.287	0.000	2.232	
Integration, Assembly & Test	WR	NAVSEA:NAVSEA	0.000	0.112	Nov 2011	0.000		0.000		-		0.000	0.000	0.112	
Integration, Assembly & Test	WR	NUWC New Port:NUWC New Port	0.000	0.075	Nov 2011	0.000		0.000		-		0.000	0.000	0.075	
Integration, Assembly & Test	WR	NSWC Dahlgren:NSWC Dahlgren	0.000	0.042	Nov 2011	0.000		0.000		-		0.000	0.000	0.042	
Subtotal			162.743	24.883		15.810		6.518		0.000		6.518			
Support (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Training Development	Various	Various:Various	0.079	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Training Development	C/CPFF	Classified Contract:Classified Contract	0.445	0.247	Nov 2011	0.375	Nov 2012	0.100	Nov 2013	-		0.100	Continuing	Continuing	Continuing
Integrated Logistics Support	Various	Various:Various	2.206	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Integrated Logistics Support	C/CPFF	Classified Contract:Classified Contract	0.000	0.100	Nov 2011	0.200	Apr 2013	0.087	Nov 2013	-		0.087	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Navy												DATE: April 2013			
APPROPRIATION/BUDGET ACTIVITY 1319: Research, Development, Test & Evaluation, Navy BA 5: System Development & Demonstration (SDD)						R-1 ITEM NOMENCLATURE PE 0304785N: Tactical Cryptologic Systems				PROJECT 2134.: Shipboard IW Exploit					
Support (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Configuration Management	WR	SSC Lant:Charleston, SC	1.390	0.123	Nov 2011	0.125	Nov 2012	0.049	Nov 2013	-		0.049	Continuing	Continuing	Continuing
Configuration Management	WR	SSC PAC:San Diego, CA	0.113	0.123	Nov 2011	0.100	Nov 2012	0.050	Nov 2013	-		0.050	Continuing	Continuing	Continuing
Technical Data	Various	Various:Various	0.542	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Technical Data	WR	SSC PAC:San Diego, CA	0.219	0.837	Nov 2011	0.400	Apr 2013	0.155	Nov 2013	-		0.155	Continuing	Continuing	Continuing
Training Development	WR	SSC LANT:Charleston, SC	0.000	0.100	Nov 2011	0.125	Nov 2012	0.079	Nov 2013	-		0.079	0.000	0.304	
Integrated Logistic Support	WR	SSC LANT:Charleston, SC	0.000	0.000		0.250	Nov 2012	0.087	Nov 2013	-		0.087	0.000	0.337	
EDM Installation	WR	SSC LANT IMO:Charleston, SC	0.000	1.500	Nov 2011	0.000		0.000		-		0.000	0.000	1.500	
Subtotal			4.994	3.030		1.575		0.607		0.000		0.607			
Test and Evaluation (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	Various	Various:Various	7.375	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Developmental Test & Evaluation	WR	SSC PAC:San Diego, CA	0.505	0.123	Nov 2011	0.492	Nov 2012	0.152	Nov 2013	-		0.152	Continuing	Continuing	Continuing
Developmental Test & Evaluation	WR	SSC LANT:Charleston, SC	0.817	0.240	Nov 2011	0.207	Nov 2012	0.089	Nov 2013	-		0.089	Continuing	Continuing	Continuing
Developmental Test & Evaluation	WR	NRL:Washington, DC	0.400	0.140	Nov 2011	0.585	Nov 2012	0.210	Nov 2013	-		0.210	Continuing	Continuing	Continuing
Operational Test & Evaluation	WR	OPTEVFOR:Norfolk, VA	3.078	0.395	Nov 2011	0.000		0.000		-		0.000	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Navy												DATE: April 2013			
APPROPRIATION/BUDGET ACTIVITY 1319: Research, Development, Test & Evaluation, Navy BA 5: System Development & Demonstration (SDD)						R-1 ITEM NOMENCLATURE PE 0304785N: Tactical Cryptologic Systems				PROJECT 2134.: Shipboard IW Exploit					
Test and Evaluation (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Test Assets	WR	SSC PAC:San Diego, CA	1.747	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Test Assets	WR	SSC LANT:Charleston, SC	0.070	0.085	Nov 2011	0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Operational Test & Evaluation	WR	SSC LANT:Charleston, SC	0.000	0.000		0.500	Nov 2012	0.000		-		0.000	0.000	0.500	
Developmental Test & Evaluation	WR	OPTEVFOR:Norfolk, VA	0.000	0.000		0.125	Apr 2013	0.000		-		0.000	0.000	0.125	
Developmental Test & Evaluation	C/CPFF	Classified Contracts:Classified Contracts	0.000	0.600	Nov 2011	0.233	Nov 2012	0.000		-		0.000	0.000	0.833	
Operational Test & Evaluation	C/CPFF	Classified Contracts:Classified Contracts	0.000	0.000		0.090	Nov 2012	0.000		-		0.000	0.000	0.090	
Developmental Test and Evaluation	WR	NRL:Washington DC	0.000	0.000		1.197	Nov 2012	0.899	Nov 2013	-		0.899	0.000	2.096	Continuing
Subtotal			13.992	1.583		3.429		1.350		0.000		1.350			
Management Services (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Contractor Engineering Support	Various	Various:Various	0.933	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Contractor Engineering Support	C/CPFF	Classified Contract:Classified Contract	0.952	0.652	Nov 2011	0.315	Nov 2012	0.100	Nov 2013	-		0.100	Continuing	Continuing	Continuing
Government Engineering Support	Various	Various:Various	1.290	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Navy												DATE: April 2013			
APPROPRIATION/BUDGET ACTIVITY						R-1 ITEM NOMENCLATURE				PROJECT					
1319: Research, Development, Test & Evaluation, Navy BA 5: System Development & Demonstration (SDD)						PE 0304785N: Tactical Cryptologic Systems				2134.: Shipboard IW Exploit					
Management Services (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Government Engineering Support	WR	SSC LANT:Charleston, SC	0.407	0.525	Nov 2011	0.339	Nov 2012	0.209	Nov 2013	-		0.209	Continuing	Continuing	Continuing
Government Engineering Support	WR	SSC PAC:San Diego, CA	1.040	0.310	Nov 2011	0.365	Nov 2012	0.139	Nov 2013	-		0.139	Continuing	Continuing	Continuing
Program Management Support	Various	Various:Various	16.211	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Program Management Support	C/CPFF	Classified Contract:Classified Contract	0.535	0.614	Nov 2011	0.362	Apr 2013	0.159	Nov 2013	-		0.159	Continuing	Continuing	Continuing
Program Management Support	WR	SSC LANT:Charleston, SC	0.065	0.063	Nov 2011	0.440	Nov 2012	0.100	Nov 2013	-		0.100	Continuing	Continuing	Continuing
Travel	WR	SPAWAR:San Diego, CA	2.101	0.080	Nov 2011	0.070	Nov 2012	0.049	Nov 2013	-		0.049	Continuing	Continuing	Continuing
Acquisition Workforce	Various	Various:Various	0.062	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Contractor Engineering Support	C/CPFF	SPAWAR:San Diego, CA	0.000	0.000		0.550	Nov 2012	0.175	Nov 2013	-		0.175	0.000	0.725	
Subtotal			23.596	2.244		2.441		0.931		0.000		0.931			
			All Prior Years	FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			205.325	31.740		23.255		9.406		0.000		9.406			
Remarks															

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**Exhibit R-4, RDT&E Schedule Profile: PB 2014 Navy**

**DATE:** April 2013

**APPROPRIATION/BUDGET ACTIVITY**

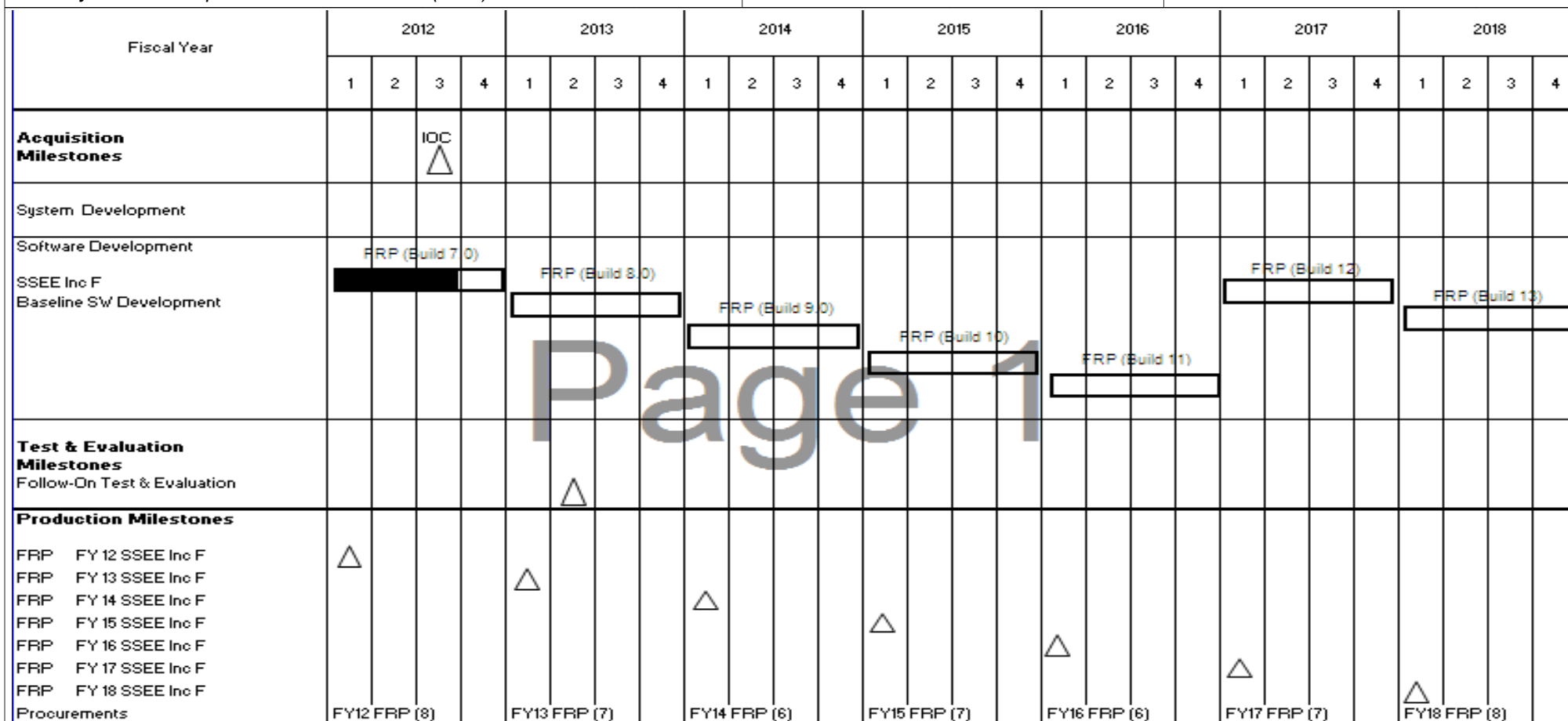
1319: *Research, Development, Test & Evaluation, Navy*  
BA 5: *System Development & Demonstration (SDD)*

**R-1 ITEM NOMENCLATURE**

PE 0304785N: *Tactical Cryptologic Systems*

**PROJECT**

2134.: *Shipboard IW Exploit*



**Remarks:**

- 1) Shipboard Information Warfare (IW) Exploit / 2134 (SSEE Inc F)
- 2) Production Milestones reflect contract award dates.

EXHIBIT R4, Schedule Profile

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Exhibit R-4, RDT&amp;E Schedule Profile: PB 2014 Navy

DATE: April 2013

## APPROPRIATION/BUDGET ACTIVITY

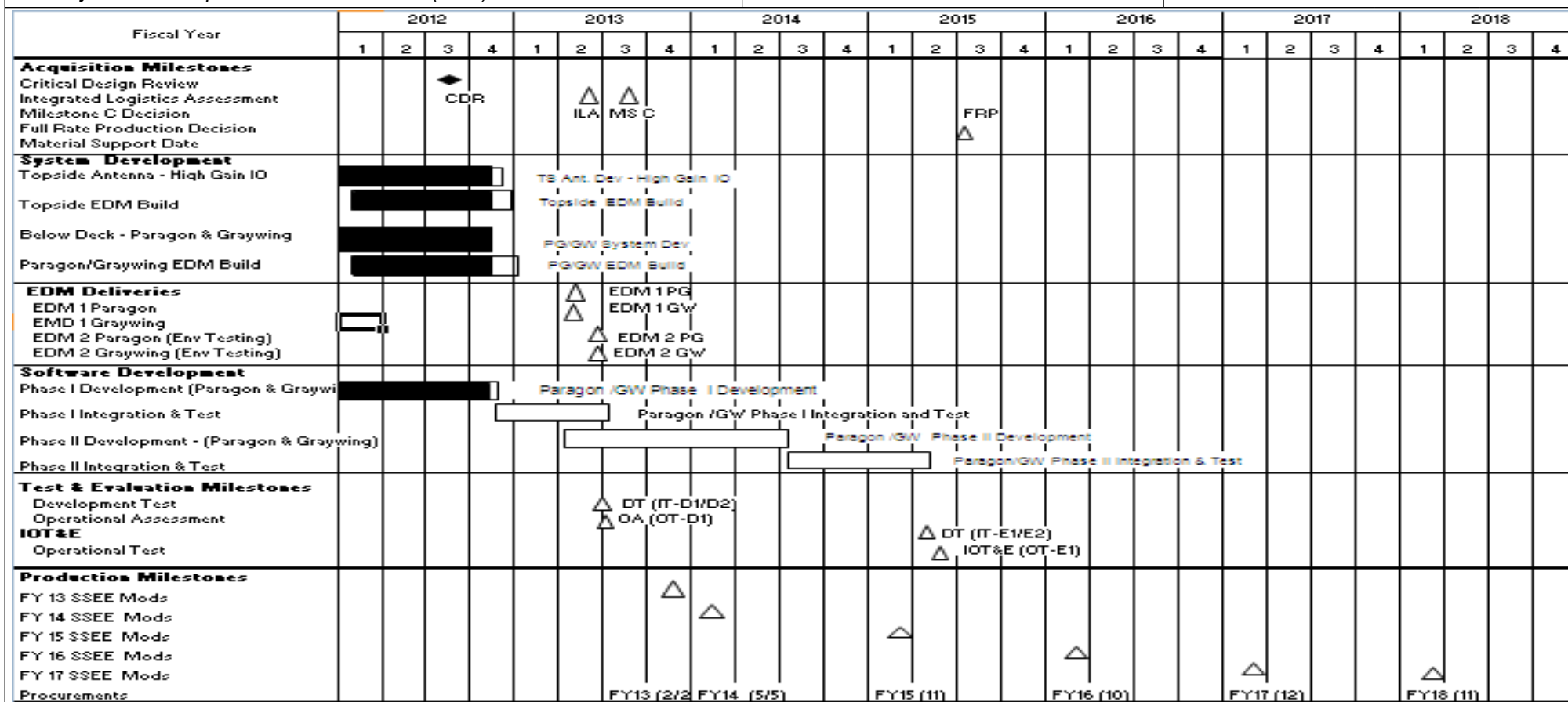
1319: Research, Development, Test & Evaluation, Navy  
BA 5: System Development & Demonstration (SDD)

## R-1 ITEM NOMENCLATURE

PE 0304785N: Tactical Cryptologic Systems

## PROJECT

2134.: Shipboard IW Exploit



## Remarks:

- 1) Shipboard Information Warfare (IW) Exploit / 2134 (SSEE Mods)
- 2) Production Milestones reflect contract award dates
- 3) Paragon and Graywing are fielded separately until Q3 FY15 Fielding decision when Graywing capabilities will be integrated into Paragon
- 4) FY15 Production Milestones include 8 Systems, 1 Maintenance and 2 Operator Training Systems
- 5) FY16 Production Milestones include 3 Systems, 1 Operator Training System



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Exhibit R-4A, RDT&E Schedule Details: PB 2014 Navy

DATE: April 2013

## APPROPRIATION/BUDGET ACTIVITY

1319: Research, Development, Test & Evaluation, Navy  
BA 5: System Development & Demonstration (SDD)

## R-1 ITEM NOMENCLATURE

PE 0304785N: Tactical Cryptologic Systems

## PROJECT

2134.: Shipboard IW Exploit

## Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b>SSEE Inc F</b>				
Inc F - Software Development	1	2012	4	2018
Inc F - Initial Operational Capability (IOC)	3	2012	3	2012
Inc F - Follow-On Test and Evaluation	2	2013	2	2013
<b>SSEE Modifications</b>				
SSEE Modification - Critical Design Review	3	2012	3	2012
SSEE Modification - Integrated Logistics Assessment	2	2013	2	2013
SSEE Modification - Phase I Fielding Decision (MSC)	3	2013	3	2013
SSEE Modification - Phase II Fielding Decision (FRP)	3	2015	3	2015
SSEE Modification - System Development (Topside/Below Deck)	1	2012	3	2012
SSEE Modification - EDM Build	1	2012	4	2012
SSEE Modification - EDM #1 (Paragon & Graywing)	2	2013	2	2013
SSEE Modification - EDM #2 (Paragon & Graywing)	2	2013	2	2013
SSEE Modification - Software Development (Phase I)	1	2012	4	2012
SSEE Modification - Software Integration & Test (Phase I)	4	2012	3	2013
SSEE Modification - Software Development (Phase II)	2	2013	3	2014
SSEE Modification - Software Integration & Test (Phase II)	3	2014	2	2015
SSEE Modification - DT (Phase I)	3	2013	3	2013
SSEE Modification - OT (Phase I)	3	2013	3	2013
SSEE Modification - DT (Phase II)	2	2015	2	2015
SSEE Modification - IOT&E (Phase II)	2	2015	2	2015